

## **REMARKS**

In order to further their business interests and the prosecution of the present application, yet without acquiescing to the Examiner's arguments and while reserving the right to file the original or similar claims in the future, Applicants herein cancel claims 47-52. As such, Claims 26-46 are pending in the application.

### **I. Nonstatutory Obviousness-Type Double Patenting**

The Examiner rejected Claims 26-27, 29-31, 33-35 and 38-46 as allegedly being unpatentable over Claims 1-2, 8-10, 22-23 and 27 of U.S. Patent No. 6,471,968 (hereinafter "the '968 patent") in view of Tomalia et al., Agnew Chem. Int. Ed. Engl. 29, 138-175 (1990), as further evidenced by Zhou et al., J Controlled Release (1999) (Office Action, page 3).

Applicants respectfully disagree.

Nonetheless, Applicants herein agree to consider filing a terminal disclaimer with regard to the '968 patent. Applicants believe that filing a terminal disclaimer to the '968 patent will render the Examiner's nonstatutory obviousness-type double patenting rejection moot.

### **II. The Amended Claims are Not Obvious**

The Examiner rejected Claims 26-35 and 47-50 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tomalia et al., Agnew Chem. Int. Ed. Engl. 29, 138-175 (1990) (hereinafter "Tomalia et al.") and Zhuo et al., Journal of Controlled Release (1999) (hereinafter "Zhuo et al.") in view of Malik et al. (Proceed. Int'l Symp. Control. Rel. Bioact. Mater., 24: 107-108 (1997) hereinafter "Malik et al.") (Office Action page 5); Claims 26-27, 36-37, 47-49 and 51-52 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tomalia et al. and Zhuo et al., in view of U.S. Patent No. 5,714,166 (herein after "the '166 patent") (Office Action page 6); and Claims 26-52 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tomalia et al. and Zhuo et al. in view the '166 patent and U.S. Patent No. 6,221,959 (hereinafter "the '959 patent") (Office Action page 8).

Applicants respectfully disagree.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness.<sup>1</sup> A *prima facie* case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art.<sup>2</sup> An obviousness analysis requires that the prior art both suggest the claimed subject matter and reveal a reasonable expectation of success to one reasonably skilled in the art.<sup>3</sup>

The test for *prima facie* obviousness is consistent with legal principles enunciated in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007). The Federal Circuit summarized the Supreme Court's holding in *KSR* that "While the *KSR* Court rejected a rigid application of the teaching, suggestion, or motivation ("TSM") test, the Court acknowledged the importance of identifying 'a reason' that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does' in an obviousness determination." *Takeda Chem. Indus., Ltd. v. Alphapharma Pty., Ltd.*, 06-1329, slip op. (Fed. Cir. June 28, 2007), at 13-14 (quoting *KSR*, 127 S. Ct. at 1731) (emphasis added). Although the TSM test should not be applied in a rigid manner, it can provide helpful insight to an obviousness inquiry. *KSR*, 127 S. Ct. at 1731. The *KSR* Court upheld the secondary considerations of non-obviounsess, noting that there is "no necessary inconsistency between the idea underlying the TSM test and the *Graham* analysis." *Id.* Additionally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See M.P.E.P. 2143.

Applicants respectfully submit that the cited references, individually or in combination, do not teach, suggest nor enable each element of the amended claims, actually lead one of ordinary skill in the art away from the claimed invention, and do not provide a reasonable expectation of success for carrying out the claimed invention to one of ordinary skill in the art.

**1) The Cited References, Individually Or In Combination, Do Not Teach or Disclose Each Element of the Amended Claims**

Applicants respectfully submit that the cited references, individually or in combination, fail to teach or disclose all elements of the claims. Specifically, the cited references fail to teach

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<sup>1</sup> See *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).

<sup>2</sup> *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993).

<sup>3</sup> *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

or suggest a composition comprising a dendrimer, the dendrimer comprising a partially acetylated generation 5 (G5) polyamideamine (PAMAM) or polypropylamine (POPAM) dendrimer wherein greater than 80% of the primary amino groups of the dendrimer are acetylated, the partially acetylated dendrimer comprising one or more functional groups, wherein at least one of the functional groups comprises a therapeutic agent, wherein the partially acetylated dendrimer comprising one or more functional groups is obtained by the process comprising: a) providing a G5 PAMAM or POPAM dendrimer; b) reacting the dendrimer with acetic anhydride under conditions such that greater than 80% of the primary amino groups of the dendrimer are acetylated; and c) functionalizing the partially acetylated dendrimer via conjugating one or more functional groups to the partially acetylated dendrimer (e.g., as recited in Claim 26). Similarly, the cited references also fail to teach or suggest such a composition comprising a second dendrimer conjugated to said acetylated dendrimer (e.g., as recited in Claim 39).

Accordingly, because the cited references do not teach, disclose or suggest all elements of the present invention, the claimed invention is not *prima facie* obvious.

Applicants respectfully submit that because Claims 26 and 39 are not obvious then Claims 27-38 and 40-46 also cannot be obvious because they all depend from a nonobvious claim. (*In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992)).

Applicants respectfully request that the Examiner withdraw the rejections made under 35 U.S.C. §103(a).

## **2) The Cited References Teach Away From the Claimed Invention**

According to the MPEP, a *prima facie* case of obviousness may be rebutted by showing that the art, in any material respect, teaches away from the claimed invention.<sup>4</sup> Moreover, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.<sup>5</sup>

As acknowledged by the Examiner, "Tomalia et al teach ester-terminated PAMAM (G0-G10), hydroxylated terminated PAMA (G0-G9), ketone terminated PAMAM (-NHCOR for G0-

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<sup>4</sup> See *In re Geisler*, 116F.3d 1465, 1471, 43 USPQ3d 1362, 1366 (Fed. Cir. 1997). MPEP §2144.05(III).

<sup>5</sup> See *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (See MPEP §2141.02).

G6), and many more (p. 163-167, also see Table 8 on p.165)." (Office Action mailed July 10, 2007, page 4). However, the Examiner fails to acknowledge that the surface reactions disclosed by Tomalia et al., in addition to being "used in various combinations to create stratified dendrimers with differentiated generations possessing different segment lengths, different branch-juncture multiplicities, and varied hydrophobicity[,]"<sup>6</sup> existed for subsequent functionalization of the dendrimer. In other words, the surface reactions disclosed by Tomalia et al. existed for generating dendrimers with reactive groups for conjugation to other moieties. For example, Tomalia et al. disclose surface reactions of a dendrimer that "can be used to produce linear nonbranched dendrimer segments which possess interior OH groups. Since the OH groups do not participate in Michael addition reactions, these hydroxylated segments can be subsequently functionalized."<sup>7</sup>

Thus, in stark contrast to the Examiner's allegation that Tomalia et al. disclose or suggest an acetylated dendrimer of the present invention, one of ordinary skill in the art immediately appreciates that Tomalia et al. teach dendrimer surface modifications that increase the dendrimer's ability to react with and/or to be conjugated to other moieties (e.g., surrounding compounds).

Thus, Applicants respectfully submit that various teachings of Tomalia et al. lead one of ordinary skill in the art away from an acetylated dendrimer defined by Claims 26-46 of the instant application.

## CONCLUSION

For the reasons set forth above, it is respectfully submitted that Applicants have addressed all grounds for rejection and Applicants' claims should be passed to allowance. Reconsideration of the application is respectfully requested. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, Applicants encourages the Examiner to call the undersigned collect at (608-218-6900).

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<sup>6</sup> See Tomalia et al., page 164, right column, fourth sentence of the last paragraph beginning on page 164 and continued on page 165.

<sup>7</sup> See Tomalia et al., page 165, left column, lines 1-5.

Respectfully submitted,

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